L13 ANSWER 1 OF 4 USPATFULL on STN
AN 96:109103 USPATFULL
TI Chlorination process, alkylation of products of said process and some products thereof
IN Clement, Katherine S., Lake Jackson, TX, United States
PA The Dow Chemical Company, Midland, MI, United States (U.S. corporation)
PI US 5578737 19961126
AI US 1994-342515 19941121 (8)
RLI Division of Ser. No. US 1993-90597, filed on 12 Jul 1993, now patented, Pat. No. US 5387725 which is a continuation-in-part of Ser. No. US 1991-789232, filed on 7 Nov 1991, now abandoned
DT Utility
FS Granted
EXNAM Primary Examiner: Lone, Werren B.
CLMN Number of Claims: 13
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 3397
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Compounds having acidic protons and a molecular structure which can delocalize the electron density of the conjugate base (target compounds) are chlorinated by contacting such compounds with a perchloroalkane and aqueous base in the presence of a phase transfer catalyst which is an tetraalkylammonium hydroxide. Chlorinated products, preferably gem-dichloro compounds, are produced. The gem-dichloro compounds are useful for alkylation of aromatic compounds. For instance fluorene is chlorinated to form 9,9-dichlorofluorene which is reacted with such compounds as phenol or aniline to form such compounds as 9,9-bis(hydroxyphenyl)fluorene, 9,9-bis(aminophenyl)fluorene, or 9-aminophenyl-9-chlorofluorene.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L13 ANSWER 2 OF 4 USPATFULL on STN
AN 95:11740 USPATFULL
TI Chlorination process, alkylation of products of said process and some products thereof
IN Walters, Marlin E., West Columbia, TX, United States
Richey, W. Frank, Lake Jackson, TX, United States
Clement, Katherine S., Lake Jackson, TX, United States
Brewster, Steven L., Lake Jackson, TX, United States
Tasset, Emmett L., Lake Jackson, TX, United States
Puckett, Paul M., Lake Jackson, TX, United States
Durvasula, V. Rao, Lake Jackson, TX, United States
Nguyen, Hong A., Lake Jackson, TX, United States
PA The Dow Chemical Company, Midland, MI, United States (U.S. corporation)
PI US 5387725 19950207
AI US 1993-90597 19930712 (8)
RLI Continuation-in-part of Ser. No. US 1991-789232, filed on 7 Nov 1991, now abandoned
DT Utility
FS Granted
EXNAM Primary Examiner: Lone, Werren B.
CLMN Number of Claims: 77
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 3613
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Compounds having acidic protons and a molecular structure which can delocalize the electron density of the conjugate base (target compounds) are chlorinated by contacting such compounds with a perchloroalkane and aqueous base in the presence of a phase transfer catalyst which is an tetraalkylammonium hydroxide. Chlorinated products, preferably

gem-dichloro compounds, are produced. The gem-dichloro compounds are useful for alkylation of aromatic compounds. For instance fluorene is chlorinated to form 9,9-dichlorofluorene which is reacted with such compounds as phenol or aniline to form such compounds as 9,9-bis(hydroxyphenyl)fluorene, 9,9-bis(aminophenyl)fluorene, or 9-aminophenyl-9-chlorofluorene.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L13 ANSWER 3 OF 4 USPATFULL on STN
AN 81:70597 USPATFULL
TI Process for **separation** and **purification** of dihydric phenols
IN Hosaka, Hirokazu, Ibaraki, Japan
Tanaka, Kunihiko, Toyonaka, Japan
Morita, Toshiharu, Yao, Japan
Shiota, Katsuyuki, Toyonaka, Japan
Ueda, Yuji, Izumi, Japan
PA Sumitomo Chemical Company Limited, Osaka, Japan (non-U.S. corporation)
PI US 4308110 19811229
AI US 1980-193588 19801003 (6)
PRAI JP 1979-130364 19791009
JP 1979-130365 19791009
DT Utility
FS Granted
EXNAM Primary Examiner: Bascomb, Jr., Wilbur L.
LREP Stevens, Davis, Miller & Mosher
CLMN Number of Claims: 5
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 551
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Highly decolorized, **purified** hydroquinone and resorcinol can be **separated** from each other from a mixture containing hydroquinone and resorcinol and recovered by continuously rectifying the mixture, thereby obtaining rectification **bottoms** containing resorcinol and hydroquinone in a ratio by weight of resorcinol to hydroquinone of 0.1-1:1 while obtaining resorcinol as a **distillate**, redistilling the rectification **bottoms**, contacting hydroquinone vapor with water vapor, condensing the hydroquinone vapor in the presence of the water vapor, thereby recovering hydroquinone as an aqueous hydroquinone solution, and then recrystallizing the aqueous hydroquinone solution, if necessary, in the presence of an organic solvent, thereby **separating** hydroquinone from the aqueous solution.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L13 ANSWER 4 OF 4 USPATFULL on STN
AN 76:39360 USPATFULL
TI Process for recovering resorcinol and hydroquinone in mixture
IN Suda, Hideaki, Takaishi, Japan
Dohgane, Iwao, Nishinomiya, Japan
Chinuki, Takashi, Toyonaka, Japan
Tanimoto, Kenji, Minoo, Japan
Hosaka, Hirokazu, Minoo, Japan
Nakao, Yukimichi, Kobe, Japan
Ueda, Yuji, Izumiotsu, Japan
Imada, Seiya, Sakai, Japan
Yanagihara, Hideki, Toyonaka, Japan
Tanaka, Kunihiko, Ibaragi, Japan
PA Sumitomo Chemical Company, Limited, Osaka, Japan (non-U.S. corporation)
PI US 3969420 19760713
AI US 1973-375920 19730702 (5)

PRAI JP 1972-67840 19720705
DT Utility
FS Granted
EXNAM Primary Examiner: Helfin, Bernard; Assistant Examiner: Morgenstern, Norman
LREP Stevens, Davis, Miller & Mosher
CLMN Number of Claims: 9
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 350
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Resorcinol and hydroquinone are recovered in mixture at a high purity from a solution containing resorcinol and hydroquinone, especially, a solution resulting from cleavage of oxidation products of isopropylbenzene and successive **distillation** of the cleavage product thereby to remove lower and higher boiling components therefrom, by adding 0.5 to 20 parts by weight of at least one solvent selected from aromatic hydrocarbons, aromatic hydrocarbons having lower alkyl substituent groups, and aliphatic hydrocarbons having 7 to 10 carbon atoms to one part by weight of said solution, if necessary, together with 1 to 30% by weight of at least one compound selected from ketones having 3 to 10 carbon atoms, alcohols having 1 to 5 carbon atoms and aliphatic esters having 3 to 5 carbon atoms, based on the weight of the organic solvent, dissolving the solution into the organic solvent by heating, **separating** a mixture of resorcinol and hydroquinone as a solid phase from the organic solvent layer after slow cooling, and recovering the solid phase as a product. The resorcinol and hydroquinone in the organic solvent layer are further recovered through extraction with water. When water is used together with the organic solvent from the beginning of extraction, the resorcinol and hydrocarbon are obtained in an aqueous layer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 8 OF 9 USPATFULL on STN
AN 75:52827 USPATFULL
TI Process for the **separation** of resorcinol and hydroquinone from their admixture
IN Suda, Hideaki, Takaishi, Japan
Dohgane, Iwao, Nishinomiya, Japan
Chinuki, Takashi, Toyonaka, Japan
Tanimoto, Kenji, Minoo, Japan
Hosaka, Hirokazu, Minoo, Japan
Ebara, Kazunari, Takarazuka, Japan
Nakao, Yukimichi, Kobe, Japan
Ueda, Yuji, Izumiotsu, Japan
Imada, Seiya, Sakai, Japan
Yasuda, Minoru, Osaka, Japan
PA Sumitomo Chemical Company, Limited, Osaka, Japan (non-U.S. corporation)
PI US 3911030 19751007
AI US 1973-370362 19730615 (5)
PRAI JP 1972-62046 19720620
DT Utility
FS Granted
EXNAM Primary Examiner: Morgenstern, Norman
LREP Stevens, Davis, Miller & Mosher
CLMN Number of Claims: 5
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 408
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A mixture containing resorcinol and hydroquinone is **separated** efficiently into resorcinol and hydroquinone by mixing the mixture with a particular organic solvent such as esters, ethers, alcohols or vinyl group-containing compounds, and **separating** the resulting slurry mixture into precipitated hydroquinone and resorcinol solution.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1967:39394 CAPLUS
DN 66:39394
TI **Separation** of solid isomers by extractive **distillation**
IN Clavel, Roger; Roget, Jean
PA Societe des usines chimiques de Rhone-Poulenc
SO Fr., 3 pp.
CODEN: FRXXAK
DT Patent
LA French
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	FR 1441627		19660610	FR	19650426
	NL 6605164			NL	

AB **Distillable** solid isomers are **sepd.** from mixts. by isolating the desired product in the vapor state and bringing the vapors into contact with a solvent and **sepg.** the desired product from the solution by known means. For example, a mixture containing catechol 39, hydroquinone 1316, resorcinol 70, and coal tar 315 g. (total weight 1740 g.) was placed in a reboiler of a **distn. column**, 50-mm. diameter and filled with wire-screen packing. The overhead of the 1st **column** entered the reboiler of a 2nd **distn. column** (500-mm. high), also containing wire-screen packing. Attached to the top of the 2nd **column** was a vacuum pump protected by a condenser. A vacuum of 100-mm. Hg was provided in the system. A stream of ethylene glycol entered the top of the 1st **distn. column** at a rate of 250 g./hr. A 2nd stream of glycol entered the

top of the 2nd **distn. column** at a rate of 350 g./hr.
On contacting the hydroquinone vapor, the glycol was heated and its temperature at the **bottom** of the 2nd **distn. column** was
.apprx.130°. The temperature in the 1st **column** reboiler was
210-250°. This temperature served as a measure of the elimination of the hydroquinone. About 1650 g. of total glycol was required. The solution of hydroquinone in the glycol was received in the reboiler of the 2nd **column** and left to cool. The hydroquinone crystals were drained, washed with H2O, and oven dried. Thus, 1218 g. of hydroquinone m. 170.5° was obtained in 92.6% yield.

L17 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:513645 CAPLUS
DN 133:137066
TI Method and installation for **separating** and **purifying** aromatic diols
IN Bourdon, Jacques; Clerin, Daniel
PA Rhodia Chimie, Fr.
SO PCT Int. Appl., 22 pp.
CODEN: PIXXD2
DT Patent
LA French
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000043334	A2	20000727	WO 2000-FR166	20000125
	WO 2000043334	A3	20021003		
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	FR 2788763	A1	20000728	FR 1999-908	19990125
	FR 2788763	B1	20010413		
	EP 1144347	A2	20011017	EP 2000-900662	20000125
	EP 1144347	A3	20021120		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2003512295	T2	20030402	JP 2000-594754	20000125
	NO 2001003619	A	20010925	NO 2001-3619	20010723
PRAI	FR 1999-908	A	19990125		
	WO 2000-FR166	W	20000125		

AB A method for **sepg**. and **purifying** a crude mixture containing hydroquinone (I), resorcinol (II) and possibly tars and/or catechol (III) includes the following steps: (1) a optional **distn**. stage in order to obtain III at the top, (2) the **bottoms** of (1) or the crude mixture is **distd**. to obtain a II-rich fraction, pure II, and I, and (3) the **bottoms** of of (2) is **distd**. to obtain a I-rich fraction, pure I, and II, whereupon said rich fractions are further refined. Preferably, one or several stages in which tar is removed precede stages (1) or (2). This process allows the production of I, II, III at purity >98%.

L22 ANSWER 8 OF 9 USPATFULL on STN
AN 82:50979 USPATFULL
TI Process for recovery of resorcinol from aqueous resorcinol solution containing hydroquinone
IN Nambu, Hirohiko, Iwakuni, Japan
Matsunaga, Fujihisa, Iwakuni, Japan
Nakagawa, Hiroaki, Iwakuni, Japan
PA Mitsui Petrochemical Industries, Ltd., Tokyo, Japan (non-U.S. corporation)
PI US 4355190 19821019
AI US 1980-215123 19801210 (6)
PRAI JP 1979-160878 19791213
DT Utility
FS Granted
EXNAM Primary Examiner: Lone, Werren B.
LREP Sherman & Shalloway
CLMN Number of Claims: 3
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 394
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A process for recovery of resorcinol from an aqueous resorcinol solution containing hydroquinone which comprises oxidizing an aqueous resorcinol solution containing about 10 to about 60% by weight of resorcinol and up to about 1% by weight of hydroquinone with molecular oxygen at conditions of pH 6.5 to 9.5, followed by recovering resorcinol from the resultant oxidation product.

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      (FILE 'HOME' ENTERED AT 15:41:12 ON 20 FEB 2004)

      FILE 'STNGUIDE' ENTERED AT 15:41:31 ON 20 FEB 2004

      FILE 'REGISTRY' ENTERED AT 15:41:41 ON 20 FEB 2004
L1             1 S HYDROQUINONE/CN
L2             1 S RESORCINOL/CN

      FILE 'CAPLUS, USPATFULL' ENTERED AT 15:42:44 ON 20 FEB 2004
L3         20834 S L1
L4         15665 S L2
L5          4053 S L3 AND L4
L6           277 S L5 AND DISTILL?
L7            43 S L6 AND BOTTOM
L8            30 S L7 AND SEPARAT?
L9            21 S L8 AND PURIF?
L10            0 S L9 AND FALLING FILM
L11           13 S L9 AND COLUMN
L12            4 S L11 AND THEORET?
L13            4 DUP REM L12 (0 DUPLICATES REMOVED)
L14            9 S L11 NOT L13
L15            9 DUP REM L14 (0 DUPLICATES REMOVED)
L16            8 S L9 NOT L11
L17            8 DUP REM L16 (0 DUPLICATES REMOVED)
L18            9 S L8 NOT L9
L19            9 S L18 NOT L11
L20            9 S L19 NOT L13
L21            9 S L20 NOT L17
L22            9 DUP REM L21 (0 DUPLICATES REMOVED)
L23           13 S L7 NOT L8
L24           13 DUP REM L23 (0 DUPLICATES REMOVED)
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